

REMARKS

Claim Amendments

Claims 20 and 32 have been canceled without prejudice.

Claims 1, 27, 28, 30, and 31 have been amended to recite that the nanofiller is “selected from the group consisting of montmorillonite, nontronite, beidellite, volkonskoite, hectorite, saponite, sauconite, magadiite, and kenyaite”. Support for these amendments may be found, at least, in paragraph [0049] of the specification as filed.

Claims 1, 27, 28, 30, and 31 have been amended to recite that “the nanofiller has no linear dimension greater than 100 nanometers”. Support for these amendments may be found, at least, in paragraph [0043] of the specification as filed.

Claims 1, 27, 28, and 30 have been amended to recite that “the nanofiller is intercalated with an intercalant selected from the group consisting of water-soluble polymers, amphoteric surface-active agents comprising an aliphatic amine cationic moiety and a sulfate or sulfonate or phosphate anionic moiety, choline compounds, organosilane compounds, and mixtures thereof”. Similarly, claim 31 has been amended to recite that the dispersion comprises “an intercalant selected from the group consisting of water-soluble polymers, amphoteric surface-active agents comprising an aliphatic amine cationic moiety and a sulfate or sulfonate or phosphate anionic moiety, choline compounds, organosilane compounds, and mixtures thereof”. Support for these amendments may be found, at least, in paragraphs [0053] and [0056] of the specification as filed.

As explained in detail below, claims 2, 4, 10, 11, 17, and 19 have been amended to use consistent Markush group language.

Objection to the Abstract

The abstract of the disclosure stands objected to as allegedly being of improper length. 5/9/06 Office Action, page 2, paragraph no. 1. Specifically, the abstract was objected to as including fewer than 50 words. *Id.*

The abstract has been amended to describe the invention in greater detail, resulting in an abstract having 79 words. Support for the added description may be found, at least, in paragraphs [0044], [0049], and [0063] of the specification as filed.

Claim Objections

Claims 2, 4, 10, 11, 17, 19, and 20 stand objected to as improperly reciting Markush groups. 5/9/06 Office Action, page 2, paragraph no. 3. Claim 20 has been canceled. Claims 2, 4, 10, 11, 17, and 19 have been amended to consistently use Markush group language of the form, "selected from the group consisting of A, B, and C".

Claim 11 was further objected to for including the phrase, "any of claim 9". Claim 11 has been amended to delete the words "any of".

Applicants respectfully request the reconsideration and withdrawal of the objections to claims 2, 4, 10, 11, 17, and 19.

Claim Rejections Under 35 U.S.C. § 112, Second Paragraph

Claims 14-16 stand rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. 5/9/06 Office Action, page 3, paragraph no. 4. In particular, that Examiner has stated that, "[i]t is not known if the formula in claim 14 shows a structural repeat unit (because of the open ends of the structure), or what is attached at the open end of the formula in claim 15, or if the formulae are meant to show a part of a larger monomer structure." *Id.* Claims 16 stands rejected under 35 U.S.C. § 112, second paragraph, as being dependent upon a rejected base claim. *Id.* Applicants respectfully traverse the rejection.

Applicants respectfully assert that the structures in claims 14 and 15 do not render those claims indefinite. In particular, one of ordinary art in the chemical arts would understand that the "acryloyl moiety" depicted in the structural formula within each claim is a fragment of the acryloyl monomer. *See, e.g.,* Philip B. Gove, Ed., "Webster's Third

New International Dictionary of the English Language Unabridged”, Springfield, MA: Merriam-Webster Inc., page 1453 (1981) (“moiety . . . 2 a : one of the portions into which something is divided : COMPONENT, PART . . . <the hemoglobin molecule contains four heme moieties – Lionel Whitby> . . .”); Erin McKean, Ed., “The New Oxford American Dictionary, Second Edition”, New York: Oxford University Press, page 1091 (2005) (“moiety . . . *Chemistry* a distinct part of a large molecule: *the enzyme removes the sulfate moiety*”). So, one of ordinary skill in the art would understand that the structural formulae are meant to show a part of a larger acryloyl monomer structure, and that the “open ends” are attachments to other, unspecified atoms in the acryloyl monomer structure. Conversely, one of ordinary skill in the art would understand that while the “comprises at least one acryloyl moiety” language of each claim allows for more than one acryloyl moiety per acryloyl monomer, the structural formulae do not correspond to repeating units that connect to each other. While the structural formulae are not intended to indicate repeating units that connect to each other, it is possible for an acryloyl monomer to include many acryloyl moieties of the claim 14 type (e.g., in an unsaturated polyester). In any case, there is no basis for requiring that Applicants specify particular atoms to which the acryloyl moieties of claims 14 and 15 are attached.

To summarize, one of ordinary skill in the chemical arts would understand the meaning of the structural formulae in claims 14 and 15. Accordingly, Applicants respectfully request the reconsideration and withdrawal of the rejection of claims 14-16 under 35 U.S.C. § 112, second paragraph.

Double Patenting Rejection over Yeager ‘782 Claims + Industrial Minerals

Claims 1-4, 7, 9-11, 13-17, 19-25, and 29 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-12 and 22-42 of U.S. Patent No. 6,352,782 of Yeager et al. (“Yeager ‘782”) in view of Industrial Minerals and Their Uses (“Industrial Minerals”). 5/9/06 Office Action, page 4, paragraph no. 5. Applicants respectfully traverse this rejection to the extent it may be applicable to the claims as amended.

Yeager '782 claim 1 describes a curable poly(phenylene ether) composition comprising (a) a poly(phenylene ether) having a particular structure and (b) a curable unsaturated monomer composition. Claim 11 states that the claim 1 composition may include, inter alia, "a filler".

The Examiner provided Applicants with a single page of relevant text from Industrial Minerals: page 222. That page includes a "Filler Classification Chart" that characterizes "Soft Clay" and "Hard Clay" as having particle sizes of about 500 to about 5000 nanometers. The "Filler Classification Chart" also characterizes fillers as "Non Reinforcing", "Semi Reinforcing", or "Reinforcing" based on the dimensions of the fillers. Applicants do not have a complete copy of Industrial Minerals and are not aware of its content other than that on page 222.

Applicants respectfully assert that the Examiner has not established a prima facie case of obviousness against independent claims 1 and 29 based on Yeager '782 claims 1-12 and 22-42 and Industrial Minerals. For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). Establishing a prima facie case of obviousness requires that all limitations of the claim be taught or suggested by the prior art. *See, e.g.*, MPEP 2143.03; *CFMT, Inc. v. Yieldup Intern. Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003); *In re Royka*, 490 F.2d 981, 985 (C.C.P.A. 1974). Applicants' independent claims 1 and 29 as currently amended include, expressly or via incorporation by reference, the limitation that the nanofiller is "intercalated with an intercalant selected from the group consisting of water-soluble polymers, amphoteric surface-active agents comprising an aliphatic amine cationic moiety and a sulfate or sulfonate or phosphate anionic moiety, choline compounds, organosilane compounds, and mixtures thereof". Yeager '782 claims 1-12 and 22-42 and page 222 of Industrial Minerals collectively fail to teach or suggest this limitation. Accordingly, a prima facie case of obviousness against claims 1 and 29 has not been established.

Given that claim 20 has been canceled, and given that claims 2-4, 7, 9-11, 13-17, 19, and 21-25 each depend ultimately from and further limit claim 1, Applicants

respectfully request the reconsideration and withdrawal of the rejection of claims 1-4, 7, 9-11, 13-17, 19, 21-25, and 29 under the judicially created doctrine of obviousness-type double patenting over Yeager '782 and Industrial Minerals.

Double Patenting Rejection over Yeager '782 Claims

Claims 1-4, 7, 9-11, 13-17, 19-25, and 29 stand rejected as “not patentably distinct from claims 1-12 and 22-42” of Yeager '782. 5/9/06 Office Action, page 5, paragraph no. 6. Applicants interpret this as a rejection under the judicially created doctrine of obviousness-type double patenting. Applicants respectfully traverse this rejection to the extent it may be applicable to the claims as amended.

As noted above, Yeager claims 1-12 and 22-42 do not teach the limitation of independent claims 1 and 29 that the nanofiller is “intercalated with an intercalant selected from the group consisting of water-soluble polymers, amphoteric surface-active agents comprising an aliphatic amine cationic moiety and a sulfate or sulfonate or phosphate anionic moiety, choline compounds, organosilane compounds, and mixtures thereof”. Accordingly, a prima facie case of obviousness against claims 1 and 29 has not been established.

Given that claim 20 has been canceled, and given that claims 2-4, 7, 9-11, 13-17, 19, and 21-25 each depend ultimately from and further limit claim 1, Applicants respectfully request the reconsideration and withdrawal of the rejection of claims 1-4, 7, 9-11, 13-17, 19, 21-25, and 29 under the judicially created doctrine of obviousness-type double patenting over Yeager '782 claims 1-12 and 22-42.

Obviousness Rejection over Yeager '782 + Industrial Minerals

Claims 1-4, 7, 9-11, 13-17, 19-25, and 29 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Yeager '782 in view of Industrial Minerals. 5/9/06 Office Action, page 5, paragraph no. 7. Applicants respectfully traverse this rejection to the extent it may be applicable to the claims as amended.

Yeager '782 generally describes compositions comprising a reactively endcapped PPE and a curable unsaturated monomer. Yeager '782 abstract. Yeager '782 mentions the use of various fillers but does not expressly describe filler sizes. Yeager '782, col. 13, line 38 to col. 14, line 49. Yeager '782 does not expressly describe intercalated fillers or intercalants used to form intercalated fillers.

As noted above, Applicants' independent claims 1 and 29 as currently amended include, expressly or via incorporation by reference, the limitation that the nanofiller is "intercalated with an intercalant selected from the group consisting of water-soluble polymers, amphoteric surface-active agents comprising an aliphatic amine cationic moiety and a sulfate or sulfonate or phosphate anionic moiety, choline compounds, organosilane compounds, and mixtures thereof". Yeager '782 and page 222 of Industrial Minerals collectively fail to teach or suggest this limitation. Accordingly, a prima facie case of obviousness against claims 1 and 29 has not been established.

Given that claim 20 has been canceled, and given that claims 2-4, 7, 9-11, 13-17, 19, and 21-25 each depend ultimately from and further limit claim 1, Applicants respectfully request the reconsideration and withdrawal of the rejection of claims 1-4, 7, 9-11, 13-17, 19, 21-25, and 29 under 35 U.S.C. § 103(a) over Yeager '782 and Industrial Minerals.

Double Patenting Rejection over Yeager '398 Claims + Industrial Minerals

Claims 1-4, 6-18, 20, 22-25, and 29 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-49 of U.S. Patent No. 6,617,398 to Yeager et al. ("Yeager '398") in view of Industrial Minerals. 5/9/06 Office Action, page 6, paragraph no. 8. Applicants respectfully traverse this rejection to the extent it may be applicable to the claims as amended.

Yeager '398 claim 1 is directed to a curable poly(phenylene ether) composition comprising (a) a poly(phenylene ether) having a particular structure, and (b) a curable unsaturated monomer comprising one or more of a monofunctional styrenic compound, a polyfunctional styrenic compound, a monofunctional acrylate compound, a

polyfunctional acrylate compound, or a polyfunctional acrylamide compound. The word “filler” does not occur in the Yeager ‘398 claims.

Industrial Minerals is discussed above:

As noted above, Applicants’ independent claims 1 and 29 as currently amended include, expressly or via incorporation by reference, the limitation that the nanofiller is “intercalated with an intercalant selected from the group consisting of water-soluble polymers, amphoteric surface-active agents comprising an aliphatic amine cationic moiety and a sulfate or sulfonate or phosphate anionic moiety, choline compounds, organosilane compounds, and mixtures thereof”. The Yeager ‘398 claims and page 222 of Industrial Minerals collectively fail to teach or suggest this limitation. Accordingly, a prima facie case of obviousness against claims 1 and 29 has not been established.

Given that claim 20 has been canceled, and given that claims 2-4, 6-18, and 22-25 each depend ultimately from and further limit claim 1, Applicants respectfully request the reconsideration and withdrawal of the rejection of claims 1-4, 6-18, 22-25, and 29 under the judicially created doctrine of obviousness-type double patenting over Yeager ‘398 claims and Industrial Minerals.

Double Patenting Rejection over Yeager ‘398 Claims

Claims 1-4, 6-18, 20, 22-25, and 29 stand rejected as “not patentably distinct from claims 1-49” of Yeager ‘398. 5/9/06 Office Action, page 7, paragraph no. 9. Applicants interpret this as a rejection under the judicially created doctrine of obviousness-type double patenting. Applicants respectfully traverse this rejection to the extent it may be applicable to the claims as amended.

As noted above, the Yeager ‘398 claims fail to teach or suggest the limitation of Applicants’ independent claims 1 and 29 that the nanofiller is “intercalated with an intercalant selected from the group consisting of water-soluble polymers, amphoteric surface-active agents comprising an aliphatic amine cationic moiety and a sulfate or sulfonate or phosphate anionic moiety, choline compounds, organosilane compounds, and

mixtures thereof". Accordingly, a prima facie case of obviousness against claims 1 and 29 has not been established.

Given that claim 20 has been canceled, and given that claims 2-4, 6-18, and 22-25 each depend ultimately from and further limit claim 1, Applicants respectfully request the reconsideration and withdrawal of the rejection of claims 1-4, 6-18, 22-25, and 29 under the judicially created doctrine of obviousness-type double patenting over Yeager '398 claims.

Obviousness Rejection over Yeager '398 + Industrial Minerals

Claims 1-4, 6-18, 20, 22-25, and 29 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Yeager '398 in view of Industrial Minerals. 5/9/06 Office Action, page 8, paragraph no. 10. Applicants respectfully traverse this rejection to the extent it may be applicable to the claims as amended.

Yeager '398 issued from a continuation of the application that issued as Yeager '782. So, the disclosure of Yeager '398 is equivalent to the disclosure of Yeager '782 described above.

Industrial Minerals is discussed above.

As noted above, Applicants' independent claims 1 and 29 as currently amended include, expressly or via incorporation by reference, the limitation that the nanofiller is "intercalated with an intercalant selected from the group consisting of water-soluble polymers, amphoteric surface-active agents comprising an aliphatic amine cationic moiety and a sulfate or sulfonate or phosphate anionic moiety, choline compounds, organosilane compounds, and mixtures thereof". Yeager '398 and page 222 of Industrial Minerals collectively fail to teach or suggest this limitation. Accordingly, a prima facie case of obviousness against claims 1 and 29 has not been established.

Given that claim 20 has been canceled, and given that claims 2-4, 6-18, and 22-25 each depend ultimately from and further limit claim 1, Applicants respectfully request the

reconsideration and withdrawal of the rejection of claims 1-4, 6-18, 22-25, and 29 under 35 U.S.C. § 103(a) over Yeager '398 in view of Industrial Minerals.

Double Patenting Rejection over Yeager '704 Claims + Industrial Minerals

Claims 1-4, 6-18, 20, 22-25, and 29 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-33 of U.S. Patent No. 6,627,704 of Yeager et al. ("Yeager '704") in view of Industrial Minerals. 5/9/06 Office Action, page 8, paragraph no. 11. Applicants respectfully traverse this rejection to the extent it may be applicable to the claims as amended.

Claim 1 of Yeager '704 is directed to a thermoset composition comprising a particular capped poly(arylene ether), an alkenyl aromatic monomer, and an acryloyl monomer. Claim 21 depends from claim 1 and further requires an additive that may be, inter alia, "fillers, fibrous fillers, [and] conductive agents". Claim 22 depends from claim 1 and further requires "a filler". Claim 23 depends from claim 1 and further requires "a fibrous filler". Claim 24 depends from claim 1 and further requires "a filler and a fibrous filler".

Industrial Minerals is discussed above.

As noted above, Applicants' independent claims 1 and 29 as currently amended include, expressly or via incorporation by reference, the limitation that the nanofiller is "intercalated with an intercalant selected from the group consisting of water-soluble polymers, amphoteric surface-active agents comprising an aliphatic amine cationic moiety and a sulfate or sulfonate or phosphate anionic moiety, choline compounds, organosilane compounds, and mixtures thereof". The Yeager '704 claims and page 222 of Industrial Minerals collectively fail to teach or suggest this limitation. Accordingly, a prima facie case of obviousness against claims 1 and 29 has not been established.

Given that claim 20 has been canceled, and given that claims 2-4, 6-18, and 22-25 each depend ultimately from and further limit claim 1, Applicants respectfully request the reconsideration and withdrawal of the rejection of claims 1-4, 6-18, 22-25, and 29 under

the judicially created doctrine of obviousness-type double patenting over Yeager '704 claims and Industrial Minerals.

Double Patenting Rejection over Yeager '704 Claims

Claims 1-4, 6-18, 20, 22-25, 29 stand rejected as “not patentably distinct from claims 1-33” of Yeager '704. 5/9/06 Office Action, page 9, paragraph no. 12. Applicants interpret this as a rejection under the judicially created doctrine of obviousness-type double patenting. Applicants respectfully traverse this rejection to the extent it may be applicable to the claims as amended.

As noted above, the Yeager '704 claims fail to teach or suggest the limitation of Applicants' independent claims 1 and 29 that the nanofiller is “intercalated with an intercalant selected from the group consisting of water-soluble polymers, amphoteric surface-active agents comprising an aliphatic amine cationic moiety and a sulfate or sulfonate or phosphate anionic moiety, choline compounds, organosilane compounds, and mixtures thereof”. Accordingly, a prima facie case of obviousness against claims 1 and 29 has not been established.

Given that claim 20 has been canceled, and given that claims 2-4, 6-18, and 22-25 each depend ultimately from and further limit claim 1, Applicants respectfully request the reconsideration and withdrawal of the rejection of claims 1-4, 6-18, 22-25, and 29 under the judicially created doctrine of obviousness-type double patenting over Yeager '704 claims.

Obviousness Rejection over Yeager '704 + Industrial Minerals

Claims 1-4, 6-18, 20, 22-25, and 29 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Yeager '704 in view of Industrial Minerals. 5/9/06 Office Action, page 10, paragraph no. 13. Applicants respectfully traverse this rejection to the extent it may be applicable to the claims as amended.

Yeager '704 generally describes a thermosetting composition comprising a capped poly(arylene ether), an alkenyl aromatic monomer, and an acryloyl monomer.

Yeager '704 abstract. A description of optional additives includes "fillers including fibrous fillers, and polymeric fillers; conductive agents . . . and combinations comprising at least one of the foregoing additives". Yeager '704, col. 14, lines 28-31. A detailed description of optional fillers is provided. Yeager '704, col. 14, line 61 to col. 20, line 50. Yeager '704 does not expressly mention "intercalants" or "intercalated fillers".

Industrial Minerals is discussed above.

As noted above, Applicants' independent claims 1 and 29 as currently amended include, expressly or via incorporation by reference, the limitation that the nanofiller is "intercalated with an intercalant selected from the group consisting of water-soluble polymers, amphoteric surface-active agents comprising an aliphatic amine cationic moiety and a sulfate or sulfonate or phosphate anionic moiety, choline compounds, organosilane compounds, and mixtures thereof". Yeager '704 and page 222 of Industrial Minerals collectively fail to teach or suggest this limitation. Accordingly, a prima facie case of obviousness against claims 1 and 29 has not been established.

Given that claim 20 has been canceled, and given that claims 2-4, 6-18, and 22-25 each depend ultimately from and further limit claim 1, Applicants respectfully request the reconsideration and withdrawal of the rejection of claims 1-4, 6-18, 22-25, and 29 under 35 U.S.C. § 103(a) over Yeager '704 in view of Industrial Minerals.

Double Patenting Rejection over Yeager '276 Claims + Industrial Minerals

Claims 1-15, 18-25, and 29 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-34 of U.S. Patent No. 6,812,276 to Yeager et al. ("Yeager '276") in view of Industrial Minerals. 5/9/2006 Office Action, page 10, paragraph no 14. Applicants respectfully traverse this rejection to the extent it may be applicable to the claims as amended.

Claim 1 of Yeager '276 is directed to a curable composition comprising a poly(arylene ether) having a particular structure, an alkenyl aromatic monomer, and an alkoxylated acryloyl monomer. Claim 26 depends from claim 1 and further requires an

additive, which may be, inter alia, “fillers, fibrous fillers, polymeric fillers, and combinations comprising at least one of the foregoing additives”.

Industrial Minerals is discussed above.

As noted above, Applicants’ independent claims 1 and 29 as currently amended include, expressly or via incorporation by reference, the limitation that the nanofiller is “intercalated with an intercalant selected from the group consisting of water-soluble polymers, amphoteric surface-active agents comprising an aliphatic amine cationic moiety and a sulfate or sulfonate or phosphate anionic moiety, choline compounds, organosilane compounds, and mixtures thereof”. The Yeager ‘276 claims and page 222 of Industrial Minerals collectively fail to teach or suggest this limitation. Accordingly, a prima facie case of obviousness against claims 1 and 29 has not been established.

Given that claim 20 has been canceled, and given that claims 2-15, 18, 19, and 21-25 each depend ultimately from and further limit claim 1, Applicants respectfully request the reconsideration and withdrawal of the rejection of claims 1-15, 18, 19, 21-25, and 29 under the judicially created doctrine of obviousness-type double patenting over Yeager ‘276 claims and Industrial Minerals.

Double Patenting Rejection over Yeager ‘276 Claims

Claims 1-15, 18-25, and 29 stand rejected as “not patentably distinct from claims 1-34” of Yeager ‘276. 5/9/2006 Office Action, page 11, paragraph no. 15. Applicants interpret this as a rejection under the judicially created doctrine of obviousness-type double patenting. Applicants respectfully traverse this rejection to the extent it may be applicable to the claims as amended.

As noted above, the Yeager ‘276 claims fail to teach or suggest the limitation of Applicants’ independent claims 1 and 29 that the nanofiller is “intercalated with an intercalant selected from the group consisting of water-soluble polymers, amphoteric surface-active agents comprising an aliphatic amine cationic moiety and a sulfate or sulfonate or phosphate anionic moiety, choline compounds, organosilane compounds, and

mixtures thereof". Accordingly, a prima facie case of obviousness against claims 1 and 29 has not been established.

Given that claim 20 has been canceled, and given that claims 2-15, 18, 19, and 21-25 each depend ultimately from and further limit claim 1, Applicants respectfully request the reconsideration and withdrawal of the rejection of claims 1-15, 18, 19, 21-25, and 29 under the judicially created doctrine of obviousness-type double patenting over the Yeager '276 claims.

Obviousness Rejection over Yeager '276 + Industrial Minerals

Claims 1-15, 18-25, and 29 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over U.S. Patent No. 6,812,276 in view of Industrial Minerals. 5/9/06 Office Action, page 12, paragraph no. 16. Applicants respectfully traverse this rejection to the extent it may be applicable to the claims as amended.

Yeager '276 generally describes a thermosetting composition comprising a capped poly(arylene ether), an alkenyl aromatic monomer, and an alkoxyated acryloyl monomer. Yeager '276 abstract. A description of optional additives includes "fillers including fibrous fillers, and polymeric fillers; conductive agents; . . . and combinations comprising at least one of the foregoing additives". Yeager '276, col. 16, lines 46-49. A detailed description of optional fillers and conductive agents is provided. Yeager '276, col. 18, line 9 to col. 23, line 67. Yeager '276 does not expressly mention "intercalants" or "intercalated fillers".

Industrial Minerals is discussed above.

As noted above, Applicants' independent claims 1 and 29 as currently amended include, expressly or via incorporation by reference, the limitation that the nanofiller is "intercalated with an intercalant selected from the group consisting of water-soluble polymers, amphoteric surface-active agents comprising an aliphatic amine cationic moiety and a sulfate or sulfonate or phosphate anionic moiety, choline compounds, organosilane compounds, and mixtures thereof". Yeager '276 and page 222 of Industrial

Minerals collectively fail to teach or suggest this limitation. Accordingly, a prima facie case of obviousness against claims 1 and 29 has not been established.

Given that claim 20 has been canceled, and given that claims 2-15, 18, 19, and 21-25 each depend ultimately from and further limit claim 1, Applicants respectfully request the reconsideration and withdrawal of the rejection of claims 1-15, 18, 19, 21-25, and 29 under 35 U.S.C. § 103(a) over Yeager '276 in view of Industrial Minerals.

Double Patenting Rejection over Zarnoch Claims + Industrial Minerals

Claims 1-4, 6-8, 13-25, and 27-29 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-37 of U.S. Patent No. 6,878,781 to Zarnoch et al. ("Zarnoch") in view of Industrial Minerals. 5/9/06 Office Action, page 12, paragraph no. 17. Applicants respectfully traverse this rejection to the extent it may be applicable to the claims as amended.

Claim 1 of Zarnoch is directed to a curable composition in powder form comprising a capped poly(arylene ether) having a particular structure, an acryloyl monomer, and an allylic monomer. Claim 22 depends directly from claim 1 and further requires an additive that may be, inter alia, "fibrous reinforcements, disc-shaped fillers, low-aspect ratio fillers, . . . and mixtures comprising at least one of the foregoing additives". Claim 23 depends directly from claim 1 and further requires "a filler". Claim 24 depends from claim 23 and specifies "a filler selected from the group consisting of silica powder, fused silica, crystalline silica, natural silica sand, boron-nitride powder, boron-silicate powder, alumina, magnesium oxide, wollastonite, calcium sulfate, calcium carbonate, talc, glass spheres, kaolin, mica, feldspar, nepheline syenite, silicate spheres, flue dust, cenospheres, fillite, aluminosilicate, quartz, quartzite, perlite, Tripoli, diatomaceous earth, silicon carbide, molybdenum sulfide, zinc sulfide, mullite, calcium silicate, zirconium silicate, barium titanate, barium ferrite, barium sulfate, aluminum, bronze, zinc, copper, nickel, carbon black, graphite, glass flakes, flaked silicon carbide, flaked aluminum diboride, aluminum flakes, steel flakes, wood flour, cellulose, cotton, sisal, jute, starch, cork flour, lignin, ground nut shells, corn, rice grain husks, polyester fibers, polyvinylalcohol fibers, aromatic polyamide fibers, polybenzimidazole fibers,

polyimide fibers, polyphenylene sulfide fibers, polyether ether ketone fibers, boron fibers, silicon carbide fibers, mixed oxide fibers, silicon carbide fibers, alumina fibers, boron carbide fibers, iron fibers, nickel fibers, copper fibers, glass fibers, quartz, vapor-grown carbon fibers, combinations comprising at least one of the foregoing fillers, and combinations comprising at least one of the foregoing fillers and a surface- treating agent.”

Industrial Minerals is discussed above.

Applicants’ independent claims 1 and 27-29 as currently amended include, expressly or via incorporation by reference, the limitation that the nanofiller is “intercalated with an intercalant selected from the group consisting of water-soluble polymers, amphoteric surface-active agents comprising an aliphatic amine cationic moiety and a sulfate or sulfonate or phosphate anionic moiety, choline compounds, organosilane compounds, and mixtures thereof”. The Zarnoch claims and page 222 of Industrial Minerals collectively fail to teach or suggest this limitation. Accordingly, a prima facie case of obviousness against claims 1 and 27-29 has not been established.

Given that claim 20 has been canceled, and given that claims 2-4, 6-8, and 13-25 each depend ultimately from and further limit claim 1, Applicants respectfully request the reconsideration and withdrawal of the rejection of claims 1-4, 6-8, 13-19, 21-25, and 27-29 under the judicially created doctrine of obviousness-type double patenting over the Zarnoch claims in view of Industrial Minerals.

Double Patenting Rejection over Zarnoch Claims

Claims 1-4, 6-8, 13-25, and 27-29 stand rejected as “not patentably distinct from claims 1-37” of Zarnoch. 5/9/06 Office Action, page 13, paragraph no. 18. Applicants interpret this as a rejection under the judicially created doctrine of obviousness-type double patenting. Applicants respectfully traverse this rejection to the extent it may be applicable to the claims as amended.

As noted above, the Zarnoch claims fail to teach or suggest the limitation of Applicants’ independent claims 1 and 27-29 that the nanofiller is “intercalated with an

intercalant selected from the group consisting of water-soluble polymers, amphoteric surface-active agents comprising an aliphatic amine cationic moiety and a sulfate or sulfonate or phosphate anionic moiety, choline compounds, organosilane compounds, and mixtures thereof". Accordingly, a prima facie case of obviousness against claims 1 and 27-29 has not been established.

Given that claim 20 has been canceled, and given that claims 2-4, 6-8, and 13-25 each depend ultimately from and further limit claim 1, Applicants respectfully request the reconsideration and withdrawal of the rejection of claims 1-4, 6-8, 13-19, 21-25, and 27-29 under the judicially created doctrine of obviousness-type double patenting over the Zarnoch claims.

Obviousness Rejection over Zarnoch + Industrial Minerals

Claims 1-4, 6-8, 13-25, and 27-29 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Zarnoch in view of Industrial Minerals. 5/9/06 Office Action, page 14, paragraph no. 19. Applicants respectfully traverse this rejection to the extent it may be applicable to the claims as amended.

Zarnoch generally describes a powder-form curable resin composition including a poly(arylene ether), an allylic monomer, and an acryloyl monomer. Zarnoch abstract. Optional additives include, inter alia, "reinforcements, disc-shaped fillers, low-aspect ratio fillers, . . . and mixtures comprising at least one of the foregoing additives". Zarnoch, col. 10, lines 28-31. A detailed description of specific fillers is provided. Zarnoch, col. 10, line 40 to col. 11, line 51. One described embodiment places upper limits on the size and amount of any filler. Zarnoch, col. 11, line 64 to col. 12, line 14. One described embodiment includes abrasive particles. Zarnoch, col. 12, lines 9-13. Zarnoch does not expressly mention "intercalants" or "intercalated fillers".

Industrial Minerals is discussed above.

As noted above, Applicants' independent claims 1 and 27-29 as currently amended include, expressly or via incorporation by reference, the limitation that the nanofiller is "intercalated with an intercalant selected from the group consisting of water-

soluble polymers, amphoteric surface-active agents comprising an aliphatic amine cationic moiety and a sulfate or sulfonate or phosphate anionic moiety, choline compounds, organosilane compounds, and mixtures thereof". Zarnoch and page 222 of Industrial Minerals collectively fail to teach or suggest this limitation. Accordingly, a prima facie case of obviousness against claims 1 and 27-29 has not been established.

Given that claim 20 has been canceled, and given that claims 2-4, 6-8, and 13-25 each depend ultimately from and further limit claim 1, Applicants respectfully request the reconsideration and withdrawal of the rejection of claims 1-4, 6-8, 13-19, 21-25, and 27-29 under 35 U.S.C. § 103(a) over Zarnoch in view of Industrial Minerals.

Double Patenting Rejection over Merfeld Claims + Industrial Minerals

Claims 1-18, 20-26, and 29 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-55 of U.S. Patent No. 6,878,782 to Merfeld et al. ("Merfeld") in view of Industrial Minerals. 5/9/06 Office Action, page 15, paragraph no. 20. Applicants respectfully traverse this rejection to the extent it may be applicable to the claims as amended.

Claim 1 of Merfeld is directed to a curable composition comprising a functionalized poly(arylene ether), an alkenyl aromatic monomer, an acryloyl monomer, and a polymeric additive having physical and solubility properties. Claim 43 depends from claim 1 and further requires "a particulate filler". Claim 44 depends from claim 43 and specifies that "the particulate filler is calcium carbonate". Claim 45 depends from claim 43 and specifies a particulate filler amount of "about 5 to about 80 weight percent . . . based on the total weight of the composition". Claim 46 depends from claim 1 and further requires "a fibrous filler". Claim 47 depends from claim 46 and specifies that "the fibrous filler is glass fibers". Claim 48 depends from claim 46 and specifies a fibrous filler amount of "2 to about 80 weight percent . . . based on the total weight of the composition".

Industrial Minerals is discussed above.

As noted above, Applicants' independent claims 1 and 29 as currently amended include, expressly or via incorporation by reference, the limitation that the nanofiller is "intercalated with an intercalant selected from the group consisting of water-soluble polymers, amphoteric surface-active agents comprising an aliphatic amine cationic moiety and a sulfate or sulfonate or phosphate anionic moiety, choline compounds, organosilane compounds, and mixtures thereof". The Zarnoch claims and page 222 of Industrial Minerals collectively fail to teach or suggest this limitation. Accordingly, a prima facie case of obviousness against claims 1 and 29 has not been established.

Given that claim 20 has been canceled, and given that claims 2-18, and 21-26 each depend ultimately from and further limit claim 1, Applicants respectfully request the reconsideration and withdrawal of the rejection of claims 1-18, 21-26, and 29 under the judicially created doctrine of obviousness-type double patenting over the Merfeld claims in view of Industrial Minerals.

Double Patenting Rejection over Merfeld Claims

Claims 1-18, 20-26, and 29 stand rejected as "not patentably distinct from claims 1-55" of Merfeld. 5/9/2006 Office Action, page 15, paragraph no. 21. Applicants interpret this as a rejection under the judicially created doctrine of obviousness-type double patenting. Applicants respectfully traverse this rejection to the extent it may be applicable to the claims as amended.

As noted above, the Merfeld claims fail to teach or suggest the limitation of Applicants' independent claims 1 and 29 that the nanofiller is "intercalated with an intercalant selected from the group consisting of water-soluble polymers, amphoteric surface-active agents comprising an aliphatic amine cationic moiety and a sulfate or sulfonate or phosphate anionic moiety, choline compounds, organosilane compounds, and mixtures thereof". Accordingly, a prima facie case of obviousness against claims 1 and 29 has not been established.

Given that claim 20 has been canceled, and given that claims 2-18, and 21-26 each depend ultimately from and further limit claim 1, Applicants respectfully request the

reconsideration and withdrawal of the rejection of claims 1-18, 21-26, and 29 under the judicially created doctrine of obviousness-type double patenting over the Merfeld claims.

Obviousness Rejection over Merfeld + Industrial Minerals

Claims 1-18, 20-26, and 29 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Merfeld in view of Industrial Minerals. 5/9/2006 Office Action, page 16, paragraph no. 22. Applicants respectfully traverse this rejection to the extent it may be applicable to the claims as amended.

Merfeld generally describes a curable composition that includes a functionalized poly(arylene ether), an alkenyl aromatic monomer, an acryloyl monomer, and a polymeric additive having particular physical and solubility properties. Merfeld abstract. Specific fillers suitable for use in the composition are described. Merfeld, col. 20, line 19 to col. 21, line 67. Merfeld does not expressly mention “intercalants” or “intercalated fillers”.

Industrial Minerals is described above.

As noted above, Applicants’ independent claims 1 and 29 as currently amended include, expressly or via incorporation by reference, the limitation that the nanofiller is “intercalated with an intercalant selected from the group consisting of water-soluble polymers, amphoteric surface-active agents comprising an aliphatic amine cationic moiety and a sulfate or sulfonate or phosphate anionic moiety, choline compounds, organosilane compounds, and mixtures thereof”. Merfeld and page 222 of Industrial Minerals collectively fail to teach or suggest this limitation. Accordingly, a prima facie case of obviousness against claims 1 and 29 has not been established.

Given that claim 20 has been canceled, and given that claims 2-18, and 21-26 each depend ultimately from and further limit claim 1, Applicants respectfully request the reconsideration and withdrawal of the rejection of claims 1-18, 21-26, and 29 under 35 U.S.C. § 103(a) over Merfeld in view of Industrial Minerals.

Double Patenting Rejection over Yeager ‘637 Claims + Industrial Minerals

Claims 1-18, 20, and 22-25 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-32 of U.S. Patent No. 6,905,637 to Yeager et al. ("Yeager '637") in view of Industrial Minerals. 5/9/06 Office Action, page 16, paragraph no. 23. Applicants respectfully traverse this rejection to the extent it may be applicable to the claims as amended.

Claim 1 of Yeager '637 is directed to a thermoset composition comprising a functionalized poly(arylene ether) having a particular structure, an alkenyl aromatic monomer, an acryloyl monomer, and a conductive agent. Claim 24 depends from claim 1 and further requires an additive that may be, inter alia, "fibrous reinforcements, disc-shaped fillers, low-aspect ratio fillers, . . . and combinations comprising at least one of the foregoing additives".

Industrial Minerals is described above.

As noted above, Applicants' independent claim 1 as currently amended includes the limitation that the nanofiller is "intercalated with an intercalant selected from the group consisting of water-soluble polymers, amphoteric surface-active agents comprising an aliphatic amine cationic moiety and a sulfate or sulfonate or phosphate anionic moiety, choline compounds, organosilane compounds, and mixtures thereof". The Yeager '637 claims and page 222 of Industrial Minerals collectively fail to teach or suggest this limitation. Accordingly, a prima facie case of obviousness against claim 1 has not been established.

Given that claim 20 has been canceled, and given that claims 2-18, and 22-25 each depend ultimately from and further limit claim 1, Applicants respectfully request the reconsideration and withdrawal of the rejection of claims 1-18, and 22-25 under the judicially created doctrine of obviousness-type double patenting over the Yeager '637 claims in view of Industrial Minerals.

Double Patenting Rejection over Yeager '637 Claims

Claims 1-18, 20, and 22-25 stand rejected as "not patentably distinct from claims 1-32" of Yeager '637. 5/9/06 Office Action, page 17, paragraph no. 24. Applicants

interpret this as a rejection under the judicially created doctrine of obviousness-type double patenting. Applicants respectfully traverse this rejection to the extent it may be applicable to the claims as amended.

As noted above, the Yeager '637 claims fail to teach or suggest the limitation of Applicants' independent claim 1 that the nanofiller is "intercalated with an intercalant selected from the group consisting of water-soluble polymers, amphoteric surface-active agents comprising an aliphatic amine cationic moiety and a sulfate or sulfonate or phosphate anionic moiety, choline compounds, organosilane compounds, and mixtures thereof". Accordingly, a prima facie case of obviousness against claim 1 has not been established.

Given that claim 20 has been canceled, and given that claims 2-18, and 22-25 each depend ultimately from and further limit claim 1, Applicants respectfully request the reconsideration and withdrawal of the rejection of claims 1-18, and 22-25 under the judicially created doctrine of obviousness-type double patenting over the Yeager '637 claims.

Obviousness Rejection over Yeager '637 + Industrial Minerals

Claims 1-18, 20, and 22-25 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Yeager '637 in view of Industrial Minerals. 5/9/06 Office Action, page 18, paragraph no. 25. Applicants respectfully traverse this rejection to the extent it may be applicable to the claims as amended.

Yeager '637 generally describes conductive thermosetting composition comprises a functionalized poly(arylene ether), an alkenyl aromatic monomer, an acryloyl monomer, and a conductive agent. Yeager '637 abstract. Specific additives suitable for use in the composition, among them "fillers including fibrous fillers and polymeric fillers", are described. Yeager '637, col. 16, lines 44-50. Specific fillers suitable for use in the composition are described. Yeager '637 col. 18, line 3 to col. 21, line 64. Yeager '637 does not expressly mention "intercalants" or "intercalated fillers".

Industrial Minerals is described above.

As noted above, Applicants' independent claim 1 as currently amended includes the limitation that the nanofiller is "intercalated with an intercalant selected from the group consisting of water-soluble polymers, amphoteric surface-active agents comprising an aliphatic amine cationic moiety and a sulfate or sulfonate or phosphate anionic moiety, choline compounds, organosilane compounds, and mixtures thereof". Yeager '637 and page 222 of Industrial Minerals collectively fail to teach or suggest this limitation. Accordingly, a prima facie case of obviousness against claim 1 has not been established.

Given that claim 20 has been canceled, and given that claims 2-18, and 22-25 each depend ultimately from and further limit claim 1, Applicants respectfully request the reconsideration and withdrawal of the rejection of claims 1-18, and 22-25 under 35 U.S.C. § 103(a) over the Yeager '637 in view of Industrial Minerals.

Obviousness Rejection over Yeager WO + Industrial Minerals

Claims 1-4, 6-20, 22-25, 27, and 29-31 stand rejected under 35 U.S.C. 103(a) as allegedly unpatentable over International Publication No. WO 01/40354 of Yeager et al. ("Yeager WO") in view of Industrial Minerals. 5/9/06 Office Action, page 19, paragraph no. 27. Applicants respectfully traverse this rejection to the extent it may be applicable to the claims as amended.

Yeager WO claims priority to U.S. Patent Application Serial No. 09/452,733, which issued in the U.S. as Yeager '782. The disclosure of Yeager WO is equivalent to that of Yeager '782, discussed above.

Industrial Minerals is discussed above.

As noted above, Applicants' independent claims 1, 27, 29, and 30 as currently amended include, expressly or via incorporation by reference, the limitation that the nanofiller is "intercalated with an intercalant selected from the group consisting of water-soluble polymers, amphoteric surface-active agents comprising an aliphatic amine cationic moiety and a sulfate or sulfonate or phosphate anionic moiety, choline compounds, organosilane compounds, and mixtures thereof". Applicants' independent claim 31 includes the similar limitation that the dispersion comprises an intercalant

“selected from the group consisting of water-soluble polymers, amphoteric surface-active agents comprising an aliphatic amine cationic moiety and a sulfate or sulfonate or phosphate anionic moiety, choline compounds, organosilane compounds, and mixtures thereof”. Yeager WO and page 222 of Industrial Minerals collectively fail to teach or suggest this limitation. Accordingly, a prima facie case of obviousness against claims 1, 27, and 29-31 has not been established.

Given that claim 20 has been canceled, and given that claims 2-4, 6-19, 22-25, and 29 each include or further limit all the limitations of claim 1, Applicants respectfully request the reconsideration and withdrawal of the rejection of claims 1-4, 6-19, 22-25, 27, and 29-31 under 35 U.S.C. § 103(a) over the Yeager WO in view of Industrial Minerals.

Obviousness Rejection over Yeager WO + Industrial Minerals + Brown

Claims 21 and 28 stand rejected under 35 U.S.C. 103(a) as allegedly unpatentable over Yeager WO in view of Industrial Minerals as applied to claims 1-4, 6-20, 22-25, and 29-31 above, and further in view of European Patent Application No. EP 0 732 371 A2 of Brown et al. (“Brown”). 5/9/06 Office Action, page 20, paragraph no. 28. Applicants respectfully traverse this rejection to the extent it may be applicable to the claims as amended.

Yeager WO and Industrial Minerals are described above.

Brown generally describes a thermoplastic composition comprising poly(phenylene ether) resin, a poly(arylene sulfide) resin and a maleimide compound. Brown, page 2, lines 39-45. Although a maleimide compound is included in the composition, it is used in an amount such that the composition as a whole remains thermoplastic. Brown, page 6, line 5-14. The composition optionally comprises “at least one polymer of an alkenylaromatic compound” (not an alkenylaromatic monomer). Brown, page 9, line 25, emphasis added. The composition is prepared by “melt blending” the component. Brown, page 10, line 26. Articles may be formed from the composition by injection molding. Brown, page 5, line 55; page 6, line 9; page 10, line 37. Brown does not expressly mention “intercalants” or “intercalated fillers”.

Applicants respectfully assert that claims 21 and 28 are patentable over the combination of Yeager WO, Industrial Minerals, and Brown for at least two reasons. First, Brown, which describes thermoplastic compositions, is not analogous art and is therefore not available as a reference for an obviousness rejection. Second, even if Brown were available as a reference, the cited references collectively fail to teach the intercalant limitation of claims 21 and 28. Accordingly, there are at least two reasons why a prima facie case of obviousness against claims 21 and 28 has not been established.

Brown Is Not Analogous Art

Brown is not available as a reference for an obviousness rejection because it is not analogous art. “When a rejection depends on a combination of prior art references, there must be some teaching, suggestion, or motivation to combine the references.” *Ecolochem, Inc. v. Southern California Edison Co.*, 56 U.S.P.Q.2d 1065, 1073 (Fed. Cir. 2000). For one of ordinary skill in the art to be motivated to combine references, the references must be from analogous art areas. *In re Clay*, 966 F.2d 656, 658-659 (Fed. Cir. 1992). A reference is analogous art with respect to an Applicant’s invention if the reference is (1) from the same field of endeavor, regardless of the problem addressed, or (2) not from the same field of endeavor, but reasonably pertinent to the particular problem with which the inventor is involved. *Id.* “Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor’s disclosure as a blueprint for piecing together the prior art to defeat patentability – the essence of hindsight.” *In re Dembiczak*, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999).

Brown is not analogous art because it is neither from the same field of endeavor as Applicants’ invention, nor is it reasonably pertinent to the particular problem with which Applicants are involved. Applicants’ invention relates to thermoset (curable) molding compositions. *See, e.g.*, Present application, title; paragraph no. [0001]. Applicants’ curable compositions are processed by techniques that effect polymerization of the composition components. *See, e.g.*, Present application, paragraph [0081] (“The composition may, for example, be cured thermally or by using irradiation techniques,

including UV irradiation and electron beam irradiation.”). In contrast, Brown describes thermoplastic resin compositions. *See, e.g.*, Brown, page 2, lines 39-45; page 6, line 13. Brown’s compositions may include a “polymer of an alkenylaromatic compound”. Brown, page 9, line 25. In contrast, Applicants’ compositions may comprise the monomeric “alkenyl aromatic monomer”. *See, e.g.*, Present application, claim 9. Applicants therefore strongly disagree with the Examiner’s assertion that “[t]he composition in [Brown] is very similar to that in [Yeager WO]”. 5/9/06 Office Action, page 21, second paragraph. Furthermore, Brown’s compositions are prepared by “melt blending”. Brown, page 10, line 26. Those of ordinary skill in the polymer arts know that melt blending is a technique characteristic of thermoplastic compositions. Articles are formed from Brown’s composition by injection molding. Brown, page 5, line 55; page 6, line 9; page 10, line 37. Those of ordinary skill in the polymer arts know that injection molding is a technique characteristic of thermoplastic compositions. Thus, Brown, directed to thermoplastic compositions, is not from the same field of endeavor as Applicants’ invention, directed to thermoset compositions.

Furthermore, Brown is not reasonably pertinent to the particular problem with which Applicants are involved. Applicants’ invention addresses the problem of “a need for thermoset compositions that can provide excellent mechanical properties and application specific properties such as dielectric strength and high modulus”. Present invention, paragraph [0004] (emphasis added). Brown is directed to thermoplastic compositions and is specifically intended “to provide poly(arylene sulfide) resin/poly(phenylene ether) resin compositions which exhibit desired levels of tensile strength and tensile elongation”. Brown, page 2, lines 34-35. Those of ordinary skill in the polymer arts know that tensile strength and tensile elongation are important properties for thermoplastic compositions, but not for thermoset compositions. Thus, Brown and Applicants address different problems with different compositions.

Brown is therefore neither from the same field of endeavor as Applicants’ invention, nor reasonably pertinent to the particular problem with which Applicants are involved. Accordingly, Brown is not analogous art and cannot be used as a reference on which to base a prima facie case of obviousness.

The Cited References Fail to Teach Applicants' Intercalants

Even if Brown were analogous art, which Applicants strongly dispute, the combination of Yeager WO, Industrial Minerals, and Brown still fails to teach the intercalants of Applicants' rejected claims. Applicants' claim 21 incorporates via its dependence from claim 1 the limitation that "the nanofiller is intercalated with an intercalant selected from the group consisting of water-soluble polymers, amphoteric surface-active agents comprising an aliphatic amine cationic moiety and a sulfate or sulfonate or phosphate anionic moiety, choline compounds, organosilane compounds, and mixtures thereof". Independent claim 28 incorporates the same limitation expressly. As noted above, Yeager WO and Industrial Minerals fail to teach or suggest this limitation. Brown does not remedy this failure. Thus, even if Brown were to be treated as analogous art (which it is not), the cited references collectively fail to teach all limitations of claims 21 and 28. The cited references thus fail to support a prima facie case of obviousness against claims 21 and 28.

Summary

For all of the above reasons, Applicants respectfully request the reconsideration and withdrawal of the rejection of claims 21 and 28 under 35 U.S.C. § 103(a) over Yeager WO in view of Industrial Minerals and further in view of Brown.

Obviousness Rejection over Yeager WO + Industrial Minerals + Kawasumi

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yeager WO in view of Industrial Minerals as applied to claims 1-4, 6-20, 22-25, and 29-31 above, and further in view of U.S. Patent No. 4,810,734 to Kawasumi et al. ("Kawasumi"). 5/9/06 Office Action, page 21, paragraph no. 29.

Applicants respectfully note that this rejection is rendered moot by the present cancellation of claim 32.

Obviousness Rejection over Yeager WO + Industrial Minerals + Yeager '637

Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yeager WO and Industrial Minerals as applied to claims 1-4, 6-20, 22-25, and 29-31 above, and further in view of Yeager '637. 5/9/06 Office Action, page 22, paragraph no. 30. Applicants respectfully traverse this rejection to the extent it may be applicable to the claims as amended.

All three cited references are discussed above.

Applicants respectfully assert that claim 33 is patentable over the combination of Yeager WO, Industrial Minerals, and Yeager '637 because the combined references fail to teach or suggest the claim 33 intercalant. Claim 33 incorporates via direct dependence from currently amended claim 31 the limitation of "combining a nanofiller with a solvent and an intercalant to form a dispersion; wherein the intercalant is selected from the group consisting of water-soluble polymers, amphoteric surface-active agents comprising an aliphatic amine cationic moiety and a sulfate or sulfonate or phosphate anionic moiety, choline compounds, organosilane compounds, and mixtures thereof". The two Yeager references and page 222 of Industrial Minerals do not teach or suggest the intercalant of this limitation. The Examiner has therefore failed to establish a prima facie case of obviousness against claim 33. Accordingly, Applicants respectfully request the reconsideration and withdrawal of the rejection of claim 33 under 35 U.S.C. § 103(a) over Yeager WO in view of Industrial Minerals and further in view of Yeager '637.

New Claims

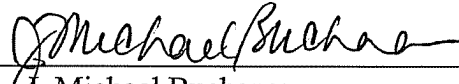
Claim 34 has been added to further claim the invention. Support for the limitation, "wherein Q is the residuum of a dihydric phenol" may be found, at least, in paragraph [0011] of the specification as filed.

It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and allowance is requested.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 50-1131 maintained by Assignee.

Respectfully submitted,

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